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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,185	07/02/2003	Dean L. Kamen	2229/150	5287

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BROMBERG & SUNSTEIN LLP  
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EXAMINER

FLANIGAN, ALLEN J

ART UNIT PAPER NUMBER

3753

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/612,185	Applicant(s) KAMEN ET AL.	
	Examiner Allen J. Flanigan	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "cross linking" in claim 1 is used by the claim to mean "bond", while the accepted meaning is "join by creating covalent bonds (of adjacent chains of a polymer or protein)." Thus, metals, for example (claim 2) cannot be said to be capable of being cross-linked according to the ordinary definition of the term. The term is indefinite because the specification does not clearly redefine the term.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Chagnot.

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Chagnot shows an annular recuperator comprising random fibers disposed in an annular matrix bounded on either end by a screen 44 and by outer and inner sleeves (42, axle 34). See lines 37-60 of column 4 of Chagnot. The recitation in the preamble of claims 1, 6, and 8, "A regenerator for a thermal cycle engine" is considered a statement of intended use which does not bring additional structure into the scope of the claims; at most, it requires the anticipatory device be capable of such use; clearly, the recuperator wheel of Chagnot could be used in this fashion (regenerators can, for example, be disposed in a line connecting two reciprocating piston chambers, and need not surround a cylinder enclosing such piston assemblies).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanimura in view of Acord.

Tanimura discloses a regenerator that can be made using sintered metallic fibers. This is deemed to read on the subject matter of claim 1 since there is no requirement that the "material for cross-linking the fibers" be distinct from the fiber material itself; hence, sintering will employ the fiber

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material to bond the fibers during heating<sup>1</sup>. Acord shows that it is known to employ nickel alloys for regenerators, and it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to use such a known material as the "metal" taught in Tanimura.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chagnot.

Chagnot specifically teach the possibility of metal wire but do not give specific suggestions of a metal type. The Examiner takes Official Notice of steel being one of various commonplace metals that are widely used in heat transfer applications (along with aluminum, copper, and stainless steel). In re Malcolm, 54 U.S.P.Q. 235. Thus, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ such a well known material as the metal wire of Chagnot to form the annular recuperator.

Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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<sup>1</sup> Note also, as shown by Wythe et al., that the term "sintering" encompasses the use of a coating of braze material on metal filler followed by heating; thus, even if the claim specified that the bonding material were distinct from the fiber material, this feature would lack patentability in view of these teachings.

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DiGiovanni et al. discuss a Japanese teaching of coating optical fibers with fusible TEOS for bonding. The remaining references show various teachings regarding regenerator structure and materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (703) 308-1015. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen J. Flanigan  
Primary Examiner  
Art Unit 3753

AJF